

CLAIMS

What is claimed is:

1. An expandable artificial functional intervertebral implant for placement and subsequent expansion within the intervertebral space of the spinal column via a posterior surgical approach

5 comprising:

a lower body having a substantially flat inferior surface and a superior surface, said superior surface of said lower body having an upwardly projecting wall located around the perimeter of said superior surface of said lower body forming a channel thereupon, said channel having a substantially flat bottom surface, and said wall having at least one
10 posteriorly located opening allowing access to said substantially flat bottom surface of said channel;

an upper body located above and in a substantially parallel configuration with said lower body, said upper body having a substantially flat superior surface and a substantially concave inferior surface, and said upper body in contact with said lower body prior to
15 expansion of the artificial functional intervertebral implant;

a joint insert having a substantially flat inferior surface and a substantially convex superior surface, said joint insert residing within said channel on said superior surface of said lower body and positioned such that said substantially flat inferior surface of said joint insert rests upon said substantially flat bottom surface of said channel prior to expansion of the
20 artificial functional intervertebral implant;

and at least one expansion plate capable of being inserted through said at least one posteriorly located opening in said wall on said superior surface of said lower body such that upon insertion of said at least one expansion plate said joint insert is lifted above said substantially flat bottom surface of said channel causing said substantially convex superior surface of said joint insert to articulate with said substantially concave inferior surface of said upper body and causing said upper body to lift above said lower body.

2. The expandable artificial functional intervertebral implant of claim 1, wherein said channel on said superior surface of said lower body has a substantially rectangular cross section in the anterior-posterior direction.

3. The expandable artificial functional intervertebral implant of claim 1, further comprising a means for preventing the dislocation of said at least one expansion plate after said expansion plate lifts said joint insert above said substantially flat bottom surface of said channel.

4. The expandable artificial functional intervertebral implant of claim 3, wherein said at least one posteriorly located opening in said wall on said superior surface of said lower body is at least one circular hole having a threaded internal surface and a diameter sufficient to allow for the passage of said at least one expansion plate, said means for preventing the dislocation of said at least one expansion plate comprises at least one set screw, and said at least one set screw is rotationally engageable with said threaded internal surface of said at least one circular hole.

5. The expandable artificial functional intervertebral implant of claim 1, wherein said superior surface of said upper body and said inferior surface of said lower body further comprises an osteoconductive scaffolding into which bone may grow.

6. The expandable artificial functional intervertebral implant of claim 1, wherein said upper body and said lower body have substantially similar shapes.

7. The expandable artificial functional intervertebral implant of claim 6, wherein the shape of said upper body and said lower body when viewed proximally is round.

5 8. The expandable artificial functional intervertebral implant of claim 6, wherein the shape of said upper body and said lower body when viewed proximally is banana-shaped.

9. The expandable artificial functional intervertebral implant of claim 8, wherein said substantially convex superior surface of said joint insert comprises a round shape when viewed proximally.

10 10. The expandable artificial functional intervertebral implant of claim 1, further comprising a means for securing said upper body to said lower body to prevent dislocation of said upper body after expansion of the artificial functional intervertebral implant.

11. The expandable artificial functional intervertebral implant of claim 10, wherein said means for securing comprises a cable fixedly attached to said upper body and said lower body.

15 12. The expandable artificial functional intervertebral implant of claim 10, wherein said means for securing comprises a plurality of pegs projecting substantially upwardly from said superior surface of said lower body, and a plurality of containment wells located on said inferior surface of said upper body, said plurality of containment wells arranged such that when said upper body is properly positioned above said lower body said plurality of pegs reside within said plurality of
20 containment wells.

13. The expandable artificial functional intervertebral implant of claim 1, wherein said substantially flat inferior surface of said joint insert further comprises a posteriorly located inclined portion adjacent to said at least one posteriorly located opening in said wall on said superior surface of said lower body to facilitate insertion of said at least one expansion device.